REMARKS

In the Office Action, claims 1-4, 6-11, 14, 16-17, 21-24, 26, 28 and 29 were rejected

under 35 U.S.C. § 103 as allegedly being unpatentable over Hill (U.S. Patent No. 6,775,256) in

view of Seo (U.S. Patent Publication No. 2003/0039217). Claims 5, 12 and 20 were rejected

under 35 U.S.C. § 103 as allegedly being unpatentable over Hill and Seo in view of Gollamudi

(U.S. Patent Publication No. 2003/0123477). Claims 13, 15, 25 and 27 were rejected under 35

U.S.C. § 103 as allegedly being unpatentable over Hill and Seo in view of Tiedemann, Jr. (U.S.

Patent Publication No. 2002/00304170). Applicants respectfully traverse the Examiner's

rejections.

In accordance with the iterative technique set forth in the claimed subject matter, the

number of assigned channelization codes and the power fractions are adjusted over a plurality of

iterations to arrive at a solution that optimizes the channel capacity. In particular, the claimed

subject matter includes evaluating a number representing how many channelization codes are to

be assigned to each of the packets. The claimed subject matter further includes evaluating the

portion of the allocated transmission power to be assigned to each channelization code. This is

done using an iterative procedure. That is, in each of one or more iterations, the procedure

adjusts the allocation of the number of channelization codes and the power assigned to each

channelization code, in a manner that is responsive to channel quality metrics and to the

transmission power allocation and the numbers of assigned channelization codes as determined

during at least one prior iteration. The object is to optimize a capacity of a channel for

communicating the data packets during the current transmission.

The Office Action asserts that the combination of Hill and Seo teaches these features.

Applicants respectfully disagree. To the contrary, Hill simply selects different groups of

candidate packets that may potentially be transmitted and assigns power levels to the members of the different groups of packets. The individual packets selected to be in each candidate set are modified and the transmit power is recalculated for each candidate set until a transmit power threshold is reached, all packets have been scheduled, or a real time constraint has been met. Although Hill iterates the selection of candidate packets and the assignment of power levels to the packets, this approach does not equate to iterating the assignment of channelization code numbers and power levels assigned to each of the channelization codes for a given set of packets. Applicants do not vary which packets are in the set of packets to be sent, but rather, Applicants vary the number of channelization codes that are assigned to each of the packets and the power levels assigned to each channelization code. Hill is completely silent about assigning channelization codes. This is explained further below.

First, the scheduler of Hill operates at the radio network controller (RNC) level. In conventional CDMA systems, channelization codes are not assigned at this level, but instead are assigned at the base station level. (The Examiner has expressed disagreement with this assertion, but has provided no reasoning to support a contrary position.) It is clearly shown in Figure 2 that Hill operates at the radio network controller level, as the scheduler is shown at that level. The techniques of Hill are performed before any data is sent to the base stations 201 and 205, as also shown in Figure 2. Contrary to the position taken by the Examiner, the mere fact that Hill mentions CDMA systems does not *ipso facto* cure Hill's complete failure to contemplate the iterative assignment of channelization codes. Rather, Hill's silence on this subject is best understood as confirmation that Hill contemplates the operation of a scheduler only at the RNC level where, as noted, channelization codes are not assigned.

The Office Action states that "Most packet based systems contain schedulers which control when the individual packets are transmitted and therefore share the available resource (for example, power and codes in a CDMA system)." The Office Action fails to provide any support for this statement in the cited art. If such sharing is so common, the Office should be able to identify a reference that illustrates the sharing of power and channelization codes. The Office Action also neglects to consider that CDMA techniques in use when Hill was filed had no capacity to assign more than one channelization code per packet. Hill does not point to any deficiency of this conventional approach. In fact, Hill does not mention channelization codes even once, in this regard, or in any other regard. Much less, then, does Hill say anything to disturb the above said conventional practice of invariably using just one channelization code per packet. The Office has the burden to show how the features of the claimed subject matter are shown in the art. Merely asserting that the features might be present because the reference mentions CDMA, without teaching how the general CDMA technique must include those features is insufficient basis to reject the claims.

The iterative procedure described in the claimed subject matter is directed to determining a number of channelization codes per packet that is variable, and that, in particular, may be more than one. Clearly, then, such an approach would be considered by one of ordinary skill in the art at the time of filing only if it were already contemplated that the number of channelization codes per packet might be varied, and might be greater than one.

As Hill clearly contemplates only the invariable number of one channelization code per packet, and would be so understood by the artisan of average skill at the time the instant application was filed, it would be error to read into Hill any suggestion—much less any teaching—to iteratively determine the number of channelization codes per packet.

Seo fails to correct the deficiencies in Hill. The passage cited at paragraphs [0153]-[0156] do not mention multiple channelization codes at all much less iteratively assigning power and the number of channelization codes. In fact, the passage only mentions using a "preset channelization code C_{OVSF}. Applicants are unsure how the use of one preset channelization code equates to iterating a number of codes and the power levels. In fact, the teaching of Seo supports Applicants' position that the CDMA systems at the time of Hill used only one channelization code per packet. Seo also uses only one channelization code.

For these reasons, claims 1, 10, 16, 28, and all claims depending therefrom are allowable. Applicants respectfully request the rejections of these claims be withdrawn.

With respect to the dependent claims, the specific features set forth for the iterative technique and the use of optimization parameters, constraints, and cost functions are neither taught nor suggested by Tiedemann. The fact that Tiedemann classifies CBR, VBR, and ABR classes as having different costs does not equate to using a cost function or constraints as set forth in the claimed subject matter. For example, in claim 13 a first order derivative of the cost function is applied. The recognition of different cost classes in Tiedemann has nothing to do with a first order derivative of a cost function. There is absolutely no support for the rejection based on the teachings of Tiedemann. Furthermore, there can be no rational argument that would require that the feature of using a first order derivative of the cost function would be inherent in Tiedemann, and Tiedemann uses neither a cost function, nor any manipulations thereof. Tiedemann simply uses the cost classifications for selecting which packets to transmit.. The general rejections provided do not address with specificity each and every limitation of the claimed subject matter.

In view of the foregoing, Applicants respectfully submit that all pending claims are in condition for allowance. The Examiner is invited to contact the undersigned at (713) 934-4070 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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